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ORIGINAL ARTICLE

Analysis of Childhood Obesity- A Clinical Study

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***ABSTRACT*:**
Background: Childhood obesity is one of the most serious public health challenges of the 21st century. The present study was conducted to assess the cases of childhood obesity. **Materials & Methods:** The present study was conducted on 1260 children age ranged 7- 15 years of both genders. Children with body mass index (BMI) above 95th percentile were considered as obese, those between 85th and 95th percentile as overweight, and those with BMI below the 5th percentile were considered as underweight. **Results:** Out of 1260 children, boys were 570 and girls were 690. The difference was significant (P- 0.01). Out of 1260 children, 45 boys and 82 girls were obese, 415 boys and 454 girls were overweight and 110 boys and 154 girls were underweight. The difference was significant (P< 0.05). Maximum obese were seen in 8 years followed by 7 years and 9 years, over weight in years 15 followed by 14 years and 13 years, underweight in 9 years followed by 10 years and 8 years. The difference was significant (P- 0.05). **Conclusion:** With the shift of living trend from outdoor play to indoor entertainment, the prevalence of obesity and overweight children is increasing day by day. Obesity was most commonly seen in 8 years of children and overweight were seen in 15 years children.
Key words: Body mass index, Obesity, Underweight

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INTRODUCTION

Obesity has become a worldwide phenomenon cutting across regional and economic barriers. Childhood obesity has emerged as an epidemic not only in the developed countries but also in the developing countries that are in rapid epidemiological transition, and India is no exception. School based data in India demonstrates prevalence of obesity in the range of 5.6% to 24% among children and adolescents.[1]

Childhood obesity is one of the most serious public health challenges of the 21st century. Up to the 1980s developing countries were with the lowest rates, but since then overweight and obesity prevalence have gradually increased in children. The global prevalence of overweight and obesity in children aged 5 -17 years is 10% and this global average covers a wide range of prevalence levels in different regions and countries with above 30% in America and below 2% in Sub Saharan Africa.[2]

Obesity is a condition of abnormal or excess fat accumulation in adipose tissue, which may adversely affect health of body and increases health problems. Although the mechanism of obesity development is not fully understood, it is confirmed that obesity occurs when energy intake exceeds energy expenditure. Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity, and genetic susceptibility. A few cases are caused primarily by genes, endocrine disorders, medications, or mental disorder. The view that obese people eat little yet gain weight due to a slow metabolism is not generally supported. On average, obese people have greater energy expenditure than their normal counterparts due to the energy required to maintain an increased body mass.[3]

Obesity negatively influences a child's self-esteem and results in diminished quality of life. Moreover, children with high body mass index (BMI) often become obese adults, who are at increased risk of developing obesity-related diseases, such as type 2 diabetes, hypertension, dyslipidemia and certain types of cancer and place significant financial burden on healthcare systems.[4] The present study was conducted to assess the cases of childhood obesity.

MATERIALS & METHODS

The present study was conducted in the department of pediatrics. It included 1260 children age ranged 7- 15 years of both genders. Ethical clearance was obtained prior to the study.

General information such as name, age, gender etc was noted.

In all subjects, height (mm) and weight (Kg) were measured using standard techniques. Children with body mass index (BMI) above 95th percentile were considered as obese, those between 85th and 95th percentile as overweight, and those with BMI below the 5th percentile were considered as underweight. The results were tabulated and subjected to chi-square test. P value <0.05 was considered as significant.

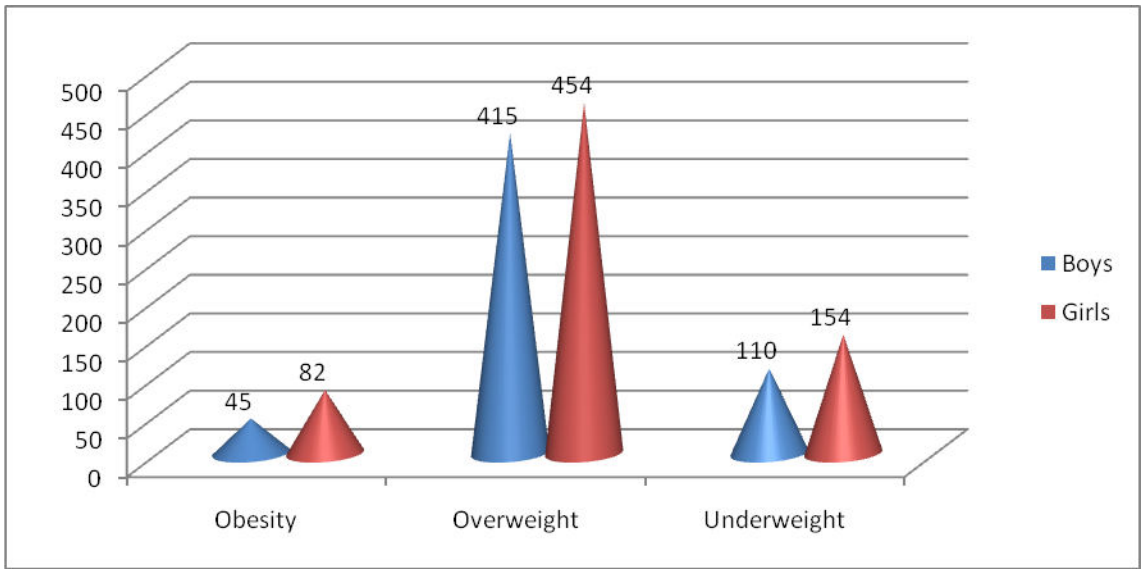
RESULTS

Table I Distribution of subjects

Total- 1260		
Boys	Girls	P value
570	690	0.01

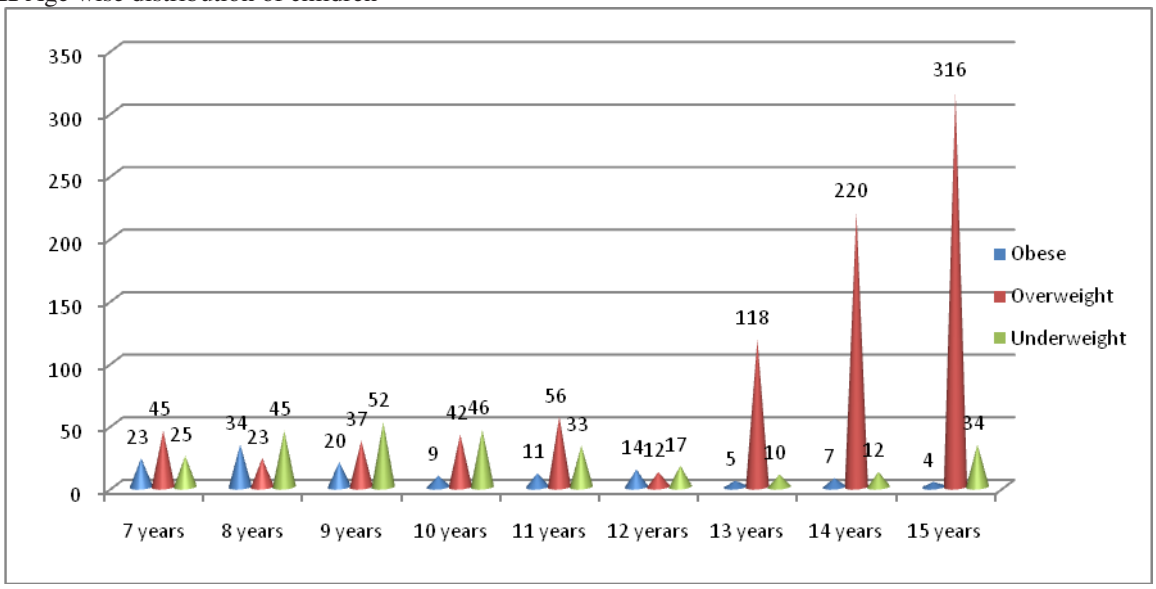
Table I shows that out of 1260 children, boys were 570 and girls were 690. The difference was significant (P- 0.01).

Graph I Cases of obesity, underweight and overweight



Graph I shows that out of 1260 children, 45 boys and 82 girls were obese, 415 boys and 454 girls were overweight and 110 boys and 154 girls were underweight. The difference was significant (P< 0.05).

Graph II Age wise distribution of children



Graph II shows that maximum obese were seen in 8 years followed by 7 years and 9 years, over weight in years 15 followed by 14 years and 13 years, underweight in 9 years followed by 10 years and 8 years. The difference was significant (P- 0.05).

DISCUSSION

Obesity tracks in families, and one of the strongest predictors of child overweight is the BMI of the mother and father. A recent study showed for association with the FTO (fat mass and obesity-associated) gene and found strong associations with BMI and weight among children. Obesity is is defined by body mass index (BMI) and further evaluated in terms of fat distribution via the waist–hip ratio and total cardiovascular risk factors. BMI is closely related to both percentage body fat and total body fat. In children, a healthy weight varies with age and sex. Obesity in children and adolescents is defined not as an absolute number but in relation to a historical normal group, such that obesity is a BMI greater than the 95th percentile.[5] The present study was conducted to assess the cases of childhood obesity.

Obesity increases the risk of many physical and mental conditions. These co morbidities are most commonly shown in metabolic syndrome, a combination of medical disorders which includes: diabetes mellitus type 2, high blood pressure, high blood cholesterol, and high triglyceride levels.[6]

We found that out of 1260 children, boys were 570 and girls were 690. Out of 1260 children, 45 boys and 82 girls were obese, 415 boys and 454 girls were overweight and 110 boys and 154 girls were underweight. This is in agreement with Bhave et al.[7]

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Rapid weight gain which was traditionally considered as a healthy intervention for low birth weight infants is now recognized as a potential risk factor of increasing interest for obesity; In the geographically defined birth cohort of the Avon longitudinal study of pregnancy and childhood (ALSPAC), it showed that early postnatal catch-up growth, between birth and two years, is a risk factor for childhood obesity and may therefore contribute to the greatest risk for disease in adulthood.[9]

Evaluation of obesity in children is important as it provides an opportunity to identify the problem and prevent disease progression in to adulthood. Most of the earlier studies had a small sample size including only adolescents from affluent schools and hence the prevalence of obesity and overweight is expectedly high compared to our study, which has a large sample size of children, includes wider age groups and children from both private and government schools.[10]

Rapid increase in childhood obesity has also been attributed to a shift in the activity patterns from outdoor play to indoor entertainment: television viewing, internet, and computer games. A study suggested that decreasing any type of sedentary time is associated with lower health risk in youth aged 5-17 years.

CONCLUSION

With the shift of living trend from outdoor play to indoor entertainment, the prevalence of obesity and overweight children is increasing day by day. Obesity was most commonly seen in 8 years of children and overweight were seen in 15 years children.

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